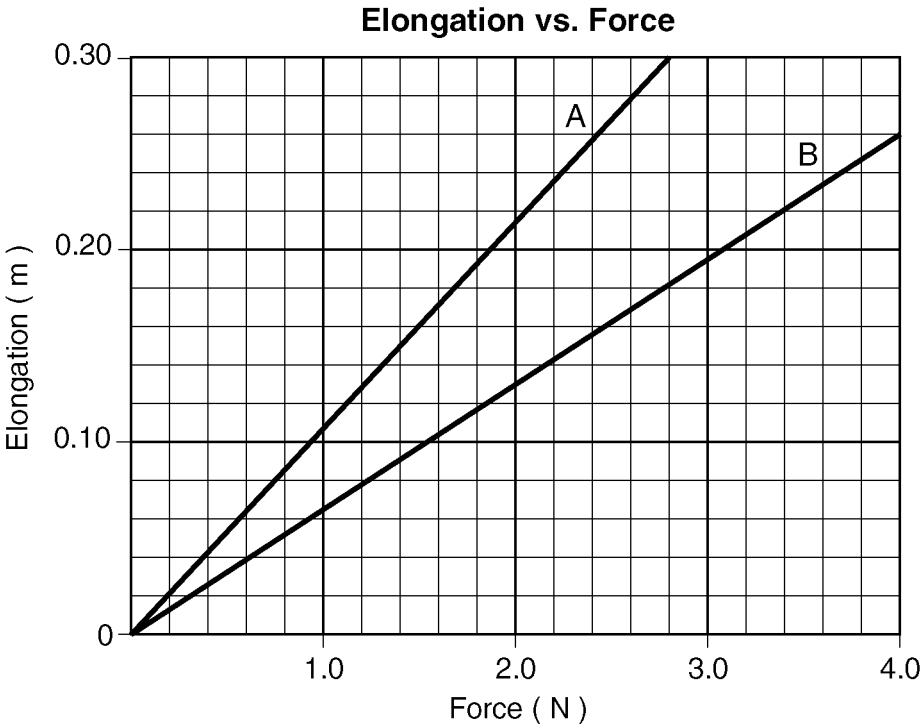
Springs: Hooke's law
F=kx

1. The graph below shows elongation as a function of the applied force for two springs, *A* and *B*.



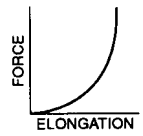
Compared to the spring constant for spring *A*, the spring constant for spring *B* is

1) smaller

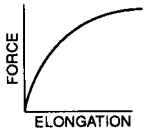
2) larger

3) the same

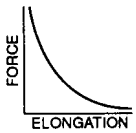
2. Which graph best represents the relationship between the elongation of a spring whose elastic limit has not been reached and the force applied to it?



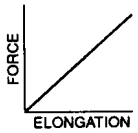
1)



3)

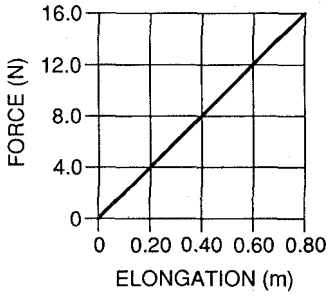


2)



4)

3. The graph below represents the relationship between the force applied to a spring and the elongation of the spring.



What is the spring constant?

1) 20 N/m

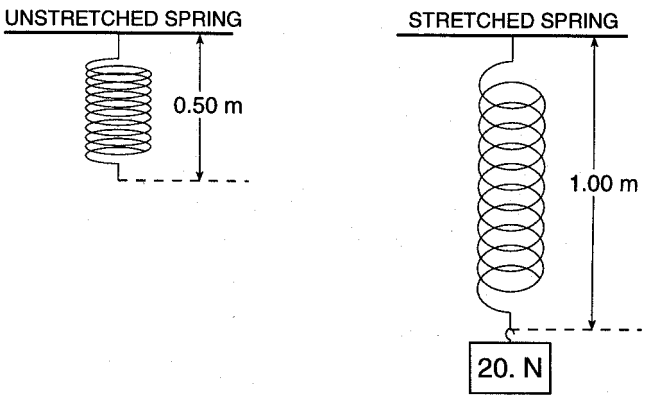
2) 9.8 N/kg

3) 0.80 N-m

4) 0.050 m/N

Springs: Hooke's law

4. A 20.-newton weight is attached to a spring, causing it to stretch, as shown in the diagram below.



What is the spring constant of this spring?

1) 0.050 N/m

2) 0.25 N/m

3) 20. N/m

4) 40. N/m

5. A spring has a spring constant of 25 Newtons per meter. The minimum force required to stretch the spring 0.25 meter from its equilibrium position is approximately

1) 1.0×10^{-4} N

2) 0.78 N

3) 6.3 N

4) 1.0×10^{2} N

6. The spring in a scale in the produce department of a supermarket stretches 0.025 meter when a watermelon weighing 1.0×10^{2} newtons is placed on the scale. The spring constant for this spring is

1) 3.2×10^{5} N/m

2) 4.0×10^{3} N/m

3) 2.5 N/m

4) 3.1×10^{-2} N/m

Springs: Hooke's law
Answer Key

1. 2
2. 4
3. 1
4. 4
5. 3
6. 2